

CLAIMS

1. A microphone (1) comprising a diaphragm (3) which has a front diaphragm surface on which sound waves impinge and a rear diaphragm surface which is at least partially acoustically separated from the front diaphragm surface, and at least one, preferably slot-shaped, sound inlet (25), through which sound waves can go to the rear diaphragm surface, characterized in that the microphone (1) has at least one damping element (29, 31, 33) and the slot-shaped sound inlet (25) substantially forms an acoustic inductance so that at least a part of the sound waves to be picked up is passed with a delay to the rear diaphragm surface.

2. A microphone as set forth in claim 1 characterized in that the acoustic resistance occurring in the sound inlet (25) is less than the acoustic resistance of the damping element.

3. A microphone as set forth in claim 1 or claim 2 characterized in that the damping element is formed by a sound passage (29) which is provided with acoustic damping material (31) and which connects a cavity (33) to the volume (32) delimited by the rear diaphragm surface.

4. A microphone as set forth in one of the preceding claims characterized in that the sound inlet (25) is of a substantially rectangular cross-section.

5. A microphone as set forth in claim 4 characterized in that the height (26) of the sound inlet (25) is less than the length (28) thereof, wherein the sound flow is along the longitudinal direction of the sound inlet (25) and the length (28) of the sound inlet (25) is in turn less than the width thereof.

6. A microphone as set forth in claim 5 characterized in that the width of the sound inlet (25) substantially corresponds to the periphery of the microphone (1).

7. A microphone as set forth in claim 6 characterized in that the sound inlet (25) is interrupted only by support portions.

8. A microphone as set forth in one of the preceding claims characterized in that the diaphragm (3) is connected to a diaphragm fixing portion (5).

9. A microphone as set forth in claims 3 and 8 characterized by a closure element which is arranged in front of a mouth opening of the sound passage (29) and has an opening which substantially corresponds to the mouth opening of the sound passage (29) and which is provided with the acoustic damping material (31).

10. A microphone as set forth in claim 8 or claim 9 characterized in that the diaphragm fixing portion (5) has an orifice (19) which leads from the exterior to the rear diaphragm surface and which is substantially closed by a sealing element (23), the slot-shaped sound inlet (25) being formed between the sealing element (23) and the diaphragm fixing portion (5).

11. A microphone as set forth in claim 10 characterized in that the sealing element (23) comprises a porous material, in particular a sintered material.

12. A microphone as set forth in claim 10 or claim 11 characterized in that the cross-section of the slot-shaped sound inlet (25)

is substantially formed by a recess (27) in the diaphragm fixing portion (5), the length (28) of the sound inlet (25) being substantially predetermined by the thickness of the sealing element (23).

13. A microphone as set forth in one of claims 8 through 12 characterized in that sealing element (23) is substantially annular.

14. A microphone as set forth in claim 13 characterized in that the diaphragm fixing portion (5) has an annular groove (21) in which the sealing element (23) is arranged.

15. A microphone as set forth in claim 13 or claim 14 characterized in that the cross-section of the slot-shaped sound inlet (25) is predetermined by the difference in size between the inside diameter of the diaphragm fixing portion (5) and the outside diameter of the sealing element (23).

16. A microphone as set forth in one of claims 8 through 15 characterized in that the sealing element (23) is in one piece with the closure element.

17. A microphone as set forth in claim 8 or claim 9 characterized in that the diaphragm fixing portion (5) substantially encloses the rear diaphragm surface and the sound inlet (25) is formed between a holding portion (37) on the diaphragm and the diaphragm fixing portion (5).

18. A microphone as set forth in claim 17 characterized in that the holding portion (37) is a diaphragm ring (37) connected to the diaphragm (3).

19. A microphone as set forth in claim 18 characterized in that the slot-shaped sound inlet (25) is formed substantially by recesses (39) in the diaphragm ring (37).

20. A microphone as set forth in claim 8 characterized by a casing portion (51) which is connected to the diaphragm fixing portion (5) and which substantially encloses the rear diaphragm surface, the sound inlet (25) being formed between the diaphragm fixing portion (5) and the casing portion (51).

21. A microphone (1) comprising a diaphragm (3) which has a front diaphragm surface on which sound waves impinge and a rear diaphragm surface acoustically separated from the front diaphragm surface, characterized in that the microphone (1) has at least one damping element (29, 31, 33) formed by a sound passage (29) which is provided with acoustic damping material (31) and which connects a cavity (33) to the volume (32) delimited by the rear diaphragm surface.